

STANDING SEAM ROOFING PANEL

Background of the Invention

1. Field of the Invention

5 The present invention relates generally to the field of roofing assemblies and in particular to a standing seam roofing panel.

2. Background of the Prior Art

Standing seam roofing assemblies are well known in the
10 art and are in common use, particularly in commercial constructions. In a typical standing seam roofing assembly, a pair of upstanding legs extend from opposing longitudinal edges of the roofing panel. The upstanding leg of a first panel is folded or bent over the upstanding
15 leg of an adjacent second panel to form a standing seam assembly. The roofing panel prevents water seepage from the surface of the roofing panels to the surface to be roofed, while the standing seam directs water and other elements toward the edge of the roof.

20 Standing seam roofing assemblies are typically joined and secured to the roof by a clip. Typical clips include a base which is secured to the surface to be roofed, as by screwing or nailing, and clipping wings which are folded over the upstanding edges of adjacent roofing panels. Each

clip is secured to the surface to be roofed between the upstanding legs of adjacent panels.

It is well known that architectural panels expand upon heating and contract upon cooling. When clips or other
5 securing devices are fastened to the panels, buckling and/or damage to the panels can result. Several prior art fastening systems have addressed this issue with varying degrees of success.

10 **Summary of the Invention**

The present invention provides a standing seam roofing assembly including a roofing panel and an anchor. The roofing panel has a pair of upstanding legs on opposing longitudinal edges. A first upstanding leg has a receiving
15 lip on an outer portion thereof with an upwardly-open channel being formed between the receiving lip and the outer portion of the first upstanding leg.

The anchor has a flat securing portion, or base, and a mating portion extending upwardly from an edge of the
20 securing portion. The mating portion has a downwardly extending leg that is slidably received over the receiving lip and into the panel channel.

The anchor may be fastened to a roofing surface. Upon expansion or contraction of the roofing panel with respect

to the anchor, the roofing panel will slide within the channel so as to prevent buckling, tearing, or other such damage to the standing seam roofing assembly.

5 The first upstanding leg of one panel is configured to be received within the second leg of an adjacent panel so as to form a standing seam that is substantially upright and symmetrical in appearance.

Brief Description of the Drawings

10 Fig. 1 is a perspective view of a roofing assembly in accordance with the present invention prior to assembly.

Fig. 2 is a side view of the roofing assembly of Fig. 1, partially assembled.

15 Fig. 3 is a side view of the roofing assembly of Fig. 2, further assembled.

Fig. 4 is a side view of the roofing assembly of Fig. 3, further assembled.

Fig. 5 is a side view of the roofing assembly in accordance with the present invention, fully assembled.

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Detailed Description of the Preferred Embodiments

Fig. 1 illustrates the components for a standing seam roofing assembly in accordance with the present invention, prior to assembly. A panel 12 has a first upstanding leg

30 at a first side edge with a second panel 12' having a second upstanding leg 50 at its second, opposing, edge. The panels 12 and 12' may be identical. An anchor 20 includes a securing portion 22 and a mating portion 24.

5 The first upstanding leg 30 of the panel 12 mates with the securing portion 22 of anchor 20 with that junction being covered by the second upstanding leg 50 of the second, adjacent, panel 12' in a manner described more fully below.

Fig. 2 illustrates the roofing assembly 10 of Fig. 1

10 wherein the anchor 20 is mated to the first upstanding leg 30 of the panel 12. The first upstanding leg 30 has a receiving lip 32 extending from an outer portion 34. The receiving lip 32 terminates an upwardly opening channel 36 which extends between the receiving lip 32 and the outer

15 portion 34 of the first upstanding leg 30. The receiving lip 32 and channel 36 are positioned at a lower portion 38 of the first leg 30.

The anchor 20 has a mating portion 24 that slidably engages the channel 36, over the receiving lip 32. The

20 mating portion 24 extends upwardly from the securing portion 22, and has a downwardly opening channel formed by a leg. The securing portion 22 of the anchor 20 is generally planar, so as to be securable to a surface to be roofed. The anchor 20 may be secured to the roofing

surface such as by a nail, screw, staple, adhesive and/or any other such suitable methods or devices, in known manner. The securing base 22 may have a plurality of apertures for receiving a fastener. Such apertures may be
5 elongated to allow a predetermined amount of lateral movement of the fastened anchor. Alternatively, the securing portion may be a solid planar surface wherein fasteners must pierce the anchor in order to secure the anchor to the roofing surface.

10 The anchor 20 may have a length that is coextensive with that of the panel 12. Alternatively, the anchor 20 may have a shorter length than the panel 12 such that a plurality of anchors may be used to secure a single panel to a roofing surface.

15 Fig. 3 illustrates the roofing assembly 10 of Fig. 1 further assembled wherein the first leg 30 of a panel 12 is covered by the second leg 50 of a substantially identical adjacent panel 12'. The second leg 50 has an upright portion 52, a top portion 54, and a downwardly extending
20 folding portion 56. When the second leg 50 covers the first leg 30, the top portion 54 of the second leg 50 overlays the top portion 33 of the first leg 30. The upright portion 52 of the second leg 50 extends upwardly adjacent the mating portion 24 of the anchor 20 and the

outer portion 34 of the first leg 30. The folding portion 56 of the second leg 50 extends downwardly toward the panel 12.

The second leg 50 has a shorter length than the first leg 30. Thus, as the second leg 50 covers the first leg 30, the adjacent panel 12 will be spaced from the securing portion 22 of the anchor 20. This spacing prevents contact between the adjacent panel and the head of the illustrated fastener. As is known in the art, such contact will result in an undesirable "read through" wherein the fastener dents or otherwise damages the overlying panel.

Fig. 4 illustrates the roofing assembly 10 of Fig. 1 wherein the second leg 50 of the adjacent panel 12 is folded. In particular, the folding portion 56 of the second leg 50 is folded inwardly, towards the upright portion 35 of the first leg 30 and second leg 50. The terminus 39 of the first leg 30 is, thus, enveloped within the top portion 54 and folding portion 56 of the second leg 50.

Fig. 5 illustrates the roofing assembly 10 of Fig. 1 wherein the uprights of each leg (35, 52) are bent downwardly. The uprights 35, 52 of the first leg 30 and second leg 50 are simultaneously bent downwardly toward the inner portion 14 of the panel 12, forming a seal 40.

As illustrated, the first leg 30 has an angled portion 42 positioned in a central region 46, the standing seam assembly 10 also including an upper region 60 and a lower region 62. The lower region 62 encompasses the junction of the channels of leg 30 and anchor 20. The upper region 60 encompasses the folds of seal 40. The angled portion 42 of the first leg 30 provides a transition between the upper region 60 and lower region 62 of the standing seam assembly 10 to present substantially flush faces of the standing seam assembly 10 -- the thickness of fold region 40 and junction region 62 being generally the same. Thus, the angled portion 42 of the first leg 30 allows the standing seam assembly 10 to be substantially symmetrical and upright in appearance on both of its exposed side surfaces.

Obviously many modifications and variations of the present invention are possible in light of the above teachings. It is therefore to be understood that the invention may be practiced otherwise than as specifically described.